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CURIOSITIES OF CHESS.

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PUBLIC interest has of late been aroused by reports in the daily papers of the great match for the chess championship of the world, and space was spared, in spite of the absorbing claims of party politics, to record the progress of this famous fight. It will be well if we can help to strengthen the impression thus made in favour of this king of games by cracking for our readers some few chess-nuts, mindful ever, as we search into musty volumes, of the saying old and true that 'Sweetest nut hath sourest rind.'

Our game has found its way to us from the far East, and is not akin to any Greek or Roman game of chance. Although its votaries are comparatively few, chess may claim to have been universal, and its board and men have long formed what has been called a common alphabet, the factors of a language understood and enjoyed by men as widely separated as the palanquin-bearer, who reflects how he may best deliver a crushing mate to a pebble King on squares traced on Indian sand, and the Icelandic bishop who sits within his walls of solid snow, and with a block of ice for table, whiles away the tedium of a polar night. Let us briefly trace some of the many sources from which writers have sought to derive its history and origin.

There does not seem to be much to choose between the claim of one Xerxes, a Babylonian philosopher in the reign of Evil-Merodach, and that of Chilo, the Spartan, one of the seven sages of Greece. Some have ventured to ascribe the honour to Palamedes, prince of Eubœa, who flourished at the siege of Troy, and who may, therefore, have had ample leisure for the elaboration of a mimic siege. We find from more than one authority that the game may have been invented as a last resource by a general whose soldiers were on the brink of mutiny. It is said that Pyrrhus, king of Epirus, turned it to good account at such a crisis; and that a Chinese

mandarin, some nineteen hundred years ago, was able thus to soothe his troops, when they had become clamorous for home, and to reconcile them to their winter-quarters by proposing this amusement for their vacant hours, until, with the return of spring, they could take the field again, better fitted by their friendly contests for the stern realities of war. If, however, we are to believe Chaucer, it was

Athalus that made the game
First of the chess—so was his name—

an assertion supported by Cornelius Agrippa, who tells us that Attalus, king of Asia, was an inventor of games. Finally, a manuscript in the Harleian collection gives us to understand that Ulysses (the crafty one) was first in this field. So many have been these claimants, that Herodotus gravely records the fact that the people of Lydia *did not* profess to have taken any part in the planning of board, or moves, or men.

We are prepared to find, in a game of which the true source is as uncertain as was that of the river Nile, that there have been different methods and manners of conducting it. Thus, in the Hindu game, four distinct armies are employed, each with their King, not ranged in the style of that four-handed chess which has been to some extent revived within the last few years, but shorn of their strength, so that each force consists of half the usual number; and marked by this further peculiarity, that each corps counts among its fighting-men a King, an Elephant, and a Knight, who slay, but cannot be slain.

In the Chinese game, which boasts the sounding title Choke-Choo-Kong-Ki (the play of the science of war), a river runs across the centre of the board, which their Elephants (equivalent to our Bishops), may never cross; and there is a fort, beyond whose limits their King may never pass.

In the Persian game, the Ferz (our Queen) advances one step forward on the opening move, in company with its pawn, thus taking up a position whence it can review and regulate the general attack. After this initial move, it can only

advance or retreat by one step at a time in a diagonal course.

Though, as we have seen, it is vain to attempt a proof from so many contradictory premises, and we must leave the actual origin of chess an open question, there can be no doubt at all that it dates as far back as any intellectual pastime that is known to us. We must be content to allow China, India, Persia, and Arabia to contend for the honour of having rocked Caius's cradle, satisfied on our part to know that the Queen of chess, grown to maturity, has held sway in Europe for many a long year. There is in existence a book upon the subject written by a Dominican friar in the year 1200, and we are told on good authority that in 1070, a certain cardinal, of evidently narrow mind, wrote to Pope Alexander II. to report that he had had occasion seriously to reprove a bishop for indulging in a game of chess. The poor prelate pleaded that this was no game of hazard; but his superiors took a sterner view, and ordered him to repeat the Psalter thrice, and to wash the feet of twelve poor persons, in penance for his offence.

To times quite as remote as these we must refer some extremely curious chessmen which were found in 1831 in the island of Lewis, and placed in the British Museum. It seems probable to those who understand such matters, that these men, which are curiously carved, were made from the tusks of walrus, about the middle of the twelfth century, by some of those hardy Norsemen who then overran the greater part of Europe. The Hebrides were then subject to invasion by the Seakings, and were tributaries to the throne of Norway till the year 1266; we may therefore conjecture that these relics of early European chess were part of the stock of some Icelandic trader whose vessel was lost at sea; and that these ivory men, which are of various sizes, and must therefore have belonged to several sets, were washed ashore, and buried by the sand for nearly seven centuries.

Hyde dates the culture of this game on English soil from the Conquest, because, as he points out, the Court of Exchequer was then established; but there is an earlier record which informs us that 'when Bishop Aetheric obtained admission to Canute the Great upon some urgent business about midnight, he found the king and his courtiers engaged, some at dice, and others at chess.' From a similar source, we find that the game was turned to a very practical account indeed in those times, for when a young nobleman wished to gain permission to pay court to the lady of his love, the fond parent commonly made trial of his temper by engaging with him over the chessboard. A ludicrous old print of somewhat later date represents a garden-party of six ladies and as many gentlemen grouped round a table, at which one of either sex is standing in a most striking attitude pretending to play at chess, while the others amuse themselves in pairs with the languishing deportment of lovers, and seem less interested in the game than an owl which sits upon a rail, with one eye on the board and one upon the company; while three rooks (appropriate birds) are busy in the background with their own affairs.

It does not need the pen of a ready writer to prove to those who are real chess-players, in

however humble a degree of excellence, the pre-eminence of chess among indoor games of skill. As a test of temper and patience, it has peculiar merits, though there have been some notable instances in which these good qualities have failed. Is it not recorded for our warning how 'John, son to King Henry, and Fulco fell at variance at chesses, and John brake Fulco's head with the chest-borde; and then Fulco gave him such a blow that had almost killed him?' and in another chronicle how 'William the Conqueror in his younger years playing at chesses with the Prince of France, losing a mate, knocked the chessboard about his pate, which was a cause afterwards of much enmity between them.'

Nor are examples lacking of the abuse of patience. The same authority who has written of the fiery Fulco gives us the following account: 'There is a story of two persons of distinction—the one lived at Madrid, the other at Rome—who played a game of chess at that distance. They began when young, and though they both lived to a very old age, yet the game was not finished. One of them dying, appointed his executor to go on with the game. Their method was: each don kept a chessboard, with the pieces ranged in exact order, in their respective closets at Madrid and Rome; and having agreed who should move first, the don informs his playfellow by letter that he has moved his King's pawn two moves; the courier speedily returns, and advises his antagonist that, the minute after he had the honour to receive this, he likewise moved his King's pawn two paces; and so they went on.' It would doubtless have turned the brain of either of these two worthy dons if they could have been present on any of the occasions in recent times when a game has been begun and finished by telegraph between places far apart in the course of a few hours.

In conclusion, let us lay before our readers some words of excellent advice published by one Arthur Saul, two hundred years ago, which all chess-players may profitably lay to heart: 'Do not at no time that thou playest at this game stand singing, whistling, knocking, or tinkering, whereby to disturb the minde of thine adversary and hinder his projects; neither keepe thou a-calling on him to playe, or a-showing of much dislike that hee playeth not fast enough; remembering with thyselfe that besides that this is a silent game, when thy turne is to play thou wilt take thine owne leasure; and that it is the royall law so to deal with another as thyselfe wouldest be dealt withall.'

RICHARD CABLE,

THE LIGHTSHIPMAN.

CHAPTER LI.—ISHTAR.

RICHARD CABLE reascended the stairs unheard and unseen. He was irritated at what he had observed. 'How proud she is!' he said. 'There is no breaking her stubborn spirit. She does this to pay me for her carriage.'

It is a curious fact that we are prone to note and condemn in others the vice that mars our own selves. We are always keen-sighted with respect to the mote in our brother's eye, especially when it is a chip off the beam in our own eye.

I have known a woman, who was a mischief-maker with her tongue throughout a neighbourhood, declare that of all things she abhorred was gossip, and that, therefore, she avoided So-and-so as a scandal-monger. The conceited man turns up his already cocked nose at another prig; and the talker is impatient of the love of chatter in his friend. I once knew two exceedingly talkative men who monopolised the whole conversation at table. The one invited the other to make a walking expedition with him of a month; but they returned in three days. 'I could not stand B,' said A; 'I was stunned with his tongue.' —'I refused to go on with A,' said B; 'he talked me lame.' The girl who sings flat, criticises the lack of tune in a companion; and the man who paints badly is the first to detect the blemishes in another's picture; and I am quite sure my most severe critics will be those who have written the worst novels.

Richard Cable was convinced that Josephine was proud and self-willed; and everything she did, every act of submission, every gentle appeal for forgiveness, was viewed by him through the distorted medium of his own pride. Indistinctly, he perceived that she was asking him to be received back on his terms—that she was ready to make every sacrifice for this end; but he could not or would not believe that she was acting from any other motive than caprice. Her pride was hurt because he had left her, and she sought to recover him, not because she cared for him, certainly not because she would be more considerate of him, but to salve over her wounded self-love.

An uneducated man, when he gets an idea into his head, will not let it go. He hugs it, as the Spartan lad hugged the fox though it bit into his vitals. There is no rotation of crops in his brain. The idea once planted there, grows and spreads, and eats up all the nutriment, and overshadows the whole surface, and allows nothing to grow under it, like the beech, which poisons the soil beneath its shadow with its dead leaves and mast cases. A man who has undergone culture puts into his head one idea, and as soon as it is ripe, reaps and garners it, ploughs up the soil, puts in another of a different nature—never lets his brain be idle, and never gives it up permanently to one idea or set of ideas. Or rather—his head is an allotment garden, in which no single idea occupies the entire field, but every lobe is used for a different crop, precisely as in an allotment every variety of vegetable is grown.

Now, Richard Cable had had the idea of Josephine's haughtiness so ploughed into his mind that he could harbour no other idea. It grew and spread like a weed, and poisoned the soil of his mind, so that no wholesome plants, no sweet herbs could flourish there. It overmastered, it outgrew, it strangled all the fragrant and nutritious plants that once occupied that garden-plot. Its roots ran like those of an ash through every portion, and spread over the entire subsoil, that nothing else could grow there, or could only grow in a stunted and starved condition. So, with singular perversity, Cable resented the conduct of Josephine in cleaning his boots, and he attributed her act to unworthy motives. He said not a word about his boots till the van was in motion

and he started up the steep hill; then he exclaimed: 'Whatever have these folk at the inn been about with my boots, that they shine like those of a dancing-master?' Then he went through a puddle, and came out with them tarnished and begrimed. He did not look round at Josephine, who made no remark, but next morning cleaned his boots again. After that, Cable kept them in his bedroom. He would not have them cleaned by Josephine.

All the calves were disposed of before Launceston was reached; and as the load was light, the horse rattled on with the van at a better rate. When they drew near to St Kerian, Cable said: 'I have written beforehand to my mother and told her my intentions. She will have arranged lodgings for you, where you may stay on your arrival. After that, as you are wilful, you must suit yourself; but I could not drop you from the van in the street with nowhere to go to. Even the calves are not treated thus; each goes to its allotted cowhouse. I have told my mother to engage the lodging as for an acquaintance of hers—acquaintance, understand, not friend—and to pay a month in advance.'

'That,' said Josephine, 'I will not allow.' She opened her purse. 'What has been spent, I will refund.'

'I do not know what the sum is,' said Cable angrily. 'I insist on paying this. Afterwards, pay as you will.'

'I will not allow it,' said Josephine vehemently. 'No; indeed, indeed, I will not. If you choose to acknowledge me then, I will take anything from you, and be thankful for every crumb of bread and drop of water; but if you will not, then I will set my teeth and lips, and not a crumb of bread or drop of water of your providing shall pass between them.'

'Yourself—youself still; wilful, defiant, proud!' he said, with a frown and a furtive glance at her over his shoulder. Then he shouted rather than spoke: 'Why will you not enjoy the estate and money bequeathed to you? It is yours; no one will dispute it with you.'

'I will not touch it,' answered Josephine, 'because I have no right to it.'

'You have every right: it was left to you.'

'But it ought never to have come to me. It was properly, justly, yours.'

'I will not have it!' shouted Richard. 'You know that. I am too proud to take it.'

'And I also; I am too proud to take it.'

'We are both proud, are we? Flint and steel, we strike, and the sparks fly. It will be ever so—strike, strike, and the sparks fly.'

'When I reach St Kerian,' said Josephine, 'I suppose, if you continue in this unforgiving mind, I shall see nothing of you?'

'Nothing.'

'It is hard to put me there alone, without friends, a stranger.'

'I came there a stranger, and have now no friends there.'

'But you have your children. With them you need no outsiders; but I am quite alone. You will let me see the dear little ones?'

'No,' he answered; 'I will not let them come near you, lest they take the infection.'

'Richard,' said Josephine very sadly, and in a low despondent voice, 'it seems to me that we

have exactly altered our positions; I was once full of cruel speeches and unkind acts, and you bore them with singular patience. Now, it is you who are cruel and unkind, and I do not cry out, though you cause me great pain.'

He did not answer her; but he said: 'I will not be seen driving you into St Kerian, as I would not be seen driving you out of Exeter. You shall get out at this next inn. It is respectable and clean. You shall stay the night there, and to-morrow come on with the carrier's wagon.'

'Will there be no one to receive me and show me where I am to go? O Richard! you are treating me very cruelly.'

'I am treating you as you deserve,' he answered. 'My mother shall await your arrival and show you to your lodgings.'

He drew up before the tavern, that stood by itself where roads crossed. He took down her box and then something else from the inside of the van.

'What is this?' asked Josephine. 'It is not mine; but it has "Cornellis, passenger, St Kerian" on it; and—it—it looks like a sewing-machine.'

'It is a sewing-machine.'

She stood and looked at him. 'You mean it as a present for me. You bought it in Launceston, because I said I would work as a dressmaker and so earn my livelihood.—No; I will not take anything you give me: send it back.'

He stamped with impatience. 'How perverse and proud you are!—You do not alter; you are always the same. I do not give you the sewing-machine. My poor little crippled Bessie shall give it you. Each of my children has a savings-bank book, and for every journey I make, some of the profits go into their little stores. Bessie shall pay for the sewing-machine out of her money. It shall be withdrawn from the bank for the purpose.—Will that content you?'

Josephine thought a moment, and then, raising her great full eyes on him, she said: 'Yes; I will take it from Bessie.—Richard! if, as you assert, I was the cause of her being injured, yet I am very sure her gentle little heart bears me no malice. You have told her that I crippled her, you have taught her to hate me!'

'No,' answered Cable hurriedly; 'I have not spoken of you, not uttered your name since I left Hanford. The children have forgotten your existence.'

'Let little Bessie come to me and I will tell her all. I will take to myself the full blame, and then—she will put her dear arms round my neck and kiss me and forgive me. But you!—'

'But I,' interrupted Cable, 'am not a child. Bessie does not know the consequences, cannot measure the full amount of injury done her. If she could, she would never, never forgive you; no—he broke his stick in his vehemence—never! If she had a head to understand, she would say: "There are hours every day that I suffer pain. I cannot sleep at night because of my back. That woman is the cause. I cannot run about and play with my sisters. That woman did it. I shall grow up deformed, and people will turn and laugh at me, and rude children point at and mock me. That woman brought this upon me. I shall see my sisters as young maidens, beautiful and admired, only I shall not be

admired. That woman is the cause. I shall love with all the fire of my heart, that grows whilst my body remains stunted, my woman's heart in a child's frame—but no one will love me; he whom I love will turn from me in disgust and take another in his arms. I owe that also to this woman."—If she foresaw all this, would Bessie forgive you and love you, and put her arms about you and kiss you? No; she would get up on her knees on your lap and beat your two great eyes with her little fists till you could not see out of them any more, but wept out of them brine and blood.' Then he mounted the driver's seat in front of his van, lashed the horse, and left her standing in the road before the inn with her box and the sewing-machine.

Thereupon, a strong temptation arose and beset Josephine. Why should she go on to St Kerian?—why sojourn there as a stranger, ignored by her own husband? Why should she bow to a life of privation of the most trying kind, intellectual privation, if nothing was to be gained by it? She had reached the first shelf in her plunge, and the golden cup was not there. Now, she was diving to a second and lower shelf, and she saw no prospect of retrieving what she sought on it. The shelf on which she had first lodged was in shallow water, within the light of the sun; it was not so far removed from the social and spiritual life of the cultured class to which she belonged, as that into which she was now called to descend. On that other shelf there was ebb and flow, and now and then she could enjoy the society of her social equals, if not to converse with them, to hear their cultured voices, see their ease of manner, and enjoy the thousand little amenities of civilisation which hang about the mansion of a lady of position. She had been there as a mermaid belonging to both regions, half lady, half servant; and very unpleasant, not to say repugnant to her cultured instincts and moral sense, as she had found the lower element which had half engirdled her, there was still an upper region in which she could breathe. Now she was to be wholly submerged, to go down to the depth where only the unlettered and undisciplined swim, where only broad dialect is spoken, coarse manners are in vogue, and life is without any of the polish and adornment found in the world above the water-line. In the upper air, when she floated, she could hear the birds sing and see the flowers, and smell the fragrance of the clover and bean fields; below, she would hear nothing but strident tones, see nothing but forms uncouth, smell nothing but what is rank. Why should she make this second plunge? Why—when she clearly saw that on this lower platform the golden goblet did not lie? Would it be a final leap? Would it necessitate a further descent into gulfs of darkness and horror? No; hardly that. Intellectually, there was no further dive. She could hardly find a voice below the ledge of the unreasoning, unread, untrained. Below that was the abyss of moral defect, into which she could not fall.

In the old Assyrian poem of *Ishtar*, the goddess is represented descending through several houses into Hades, and as she approaches each, the gatekeepers divest her of some of her clothing, till she reaches Abadon, where she is denuded of everything. Josephine was something like *Ishtar*—she was forced in her downward pilgrimage, at

every mansion of the nether world, to lay aside some of her ornaments acquired above. She had set forth with her mind richly clothed ; she was a refined and accomplished girl, passionately fond of music, with a delicate artistic taste, a love of literature, and an eager mind for the revelations of science. If she had an interest that came second to music, it was love of history—that faculty which, like music and colour, is inherent in some, is wholly deficient in others. To some, the present is but a cut flower, of fleeting charm, unless it have its root in the past, when at once it acquires interest, and is tenderly watched and cultivated. The historic faculty is closely allied to the imagination. It peoples a solitude with forms of beauty and interest ; it builds up walls, and unrolls before the fancy the volume of time, full of pictures. The possessor of these gifts is never alone, for the past is always about him, a past so infinitely purer and better than the present, because sublimated in the crucible of the mind.

Now, what struck Josephine above everything in the under-water world into which she stepped was the inability of its denizens to appreciate what is historical. They seemed to her like people who have no perspective, like half-blind men, who see men as trees walking. They had no clear ideas as to time or as to distance. Brussels and Pekin, foreign cities about equidistant, and Iceland and *Tierra del Fuego*, foreign islands in the same hemisphere. The Romans built the village churches ; but whether the classic Romans or the Roman Catholics, was not at all known : nor was it certain when Oliver Cromwell stabled his horses in the churches, whether in the time of the Romans, or in the Chartist rows ; neither whether Oliver Cromwell were a French republican or an Irish papist. Turkeys came of course from Turkey, of which, probably, Dorking is the capital, because thence came also some big fowls ; and necessarily Jerusalem artichokes are derived from the holy city, or else why are they called Jerusalem artichokes ? In literature it was the same. Below the water, the denizens had heard of Shakespeare, but didn't think much of him ; he didn't come near Miss Braddon. Swift—yes, he wrote children's stories—*Gulliver's Travels* and the *Robins*. Thackeray ! he was nowhere—not fit to hold a candle to Mrs Henry Wood ; there were no murders in his tales. In this subaqueous world, music was not ; if there had been stillness, it would have been well ; but in place of the exquisite creations of the great tone masters, sprang a fungoid, scabrous growth of comic song, *Villikens and his Dinah*, *Pop goes the Weasel*, and revivalist hymns. Josephine in descending so low left behind her everything that to her made life worth having. She must cast aside her books, lay down her music, her painting ; and be cut away from all communion with the class in which all the roots of her inner life were planted. Was she called on to do this ? What would come of the venture ?

But then came another question : Could she go back ? To Hanford Hall and to her father ? No ; she had taken her course with full determination of pursuing it to the end. She would not return. She must follow what her heart told her was the right thing to do, at whatever cost to herself. Ishtar would lay aside every adornment, only not the pure white robe of her moral dignity.

Before the last house, she would stand and wait, and not tap at that door, wait, and lie down there and die, rather than return except at the call of Richard.

CHAPTER LII.—THE SECOND SHELF.

Mrs Cable was waiting before the door of the St Kerian inn, where hung the sign of the *Silver Bowl*, when Josephine arrived. She received her with stately gravity and some coldness. The old woman saw that her daughter-in-law was greatly altered. Her girlishness was gone ; womanhood had set in, stamping and characterising her features. She was thin and pale, and did not look strong.

Mrs Cable led her to the village grocer and postmistress, a Miss Penruddock, and showed Josephine a couple of neat plain rooms, one above-stairs, a bedroom, and the other below as a sitting-room. Everything was scrupulously clean ; the walls were whitewashed, the bed and window furniture white, the china white, and the deal boards of the floor scrubbed as white as they could be got. Josephine's box was moved upstairs, and the sewing-machine put in the parlour below. Her landlady was in and out for some little while, to make sure that all was comfortable, till the sorting-time for the letters engaged her in the shop. The atmosphere of the house was impregnated with the odour of soap, tea, and candles—a wholesome and not unpleasant savour.

Bessie Cable remained standing in the bedroom ; her tall form looked unnaturally tall in the low room, of which the white ceiling was only seven feet above the white floor. 'Is there anything further you require ?' she asked. 'I promised my son that I would see that you were supplied with every requisite.'

Josephine looked at her, and drew beseechingly towards her, with her arms out, pleading to be taken to the old woman's heart. But Bessie Cable's first thought was for her son, and she could not show tenderness where he refused recognition.

'I am sorry to receive you thus,' said Mrs Cable ; 'but I cannot forget how that you have embittered my son's life, not only to himself, but also to me, his mother. I had looked forward to a peaceful old age, with him happy, after the storms and sorrows of a rough life. But he shipwrecked his peace and mine when he took you. I daresay you are repentant ; the rector told me as much ; but the wrong done remains working. One year's seeds make five years' weeds, and the weeds are growing out of the sowing of your cruel lips.'

'You also !' cried Josephine.—'Is no one to be kind to me—all to reproach me ?'

'You must make friends here.'

'But you—will you not be my mother, and my friend ?'

'Your mother—no. Your friend !—not openly. That I cannot be, because of my son ; but I will not refuse you an inner friendship. I believe that now you intend to do right, and that you have acted well in coming here.'

'You think so ?'

'Yes ; I am sure you have. You could in no other way have shown that you wished to undo the past.'

'I am glad you say that; oh, I am glad! Yesterday, I had a terrible moment of struggle; I was almost about to go away, and not come on here. Now you have repaid me for my fight by these words.'

Bessie looked steadily and searchingly at her. 'I have had years of waiting for what could never come. I had ever an anguish at my heart, like a cancer eating it out. But that is over. It was torn out by the roots in one hour of great struggle and pain, and since then I have been at ease within. You have now your pain. Mine was different from yours. Mine grew out of a blow dealt me. Yours comes because you have dealt blows. There is nothing for it but to bear the pain and wait. Some day the pain will be over; but how it will be taken away, God only knows. I thought that mine would never go; but it went, and went suddenly, and I have felt nothing since. No medicine can heal you—only patience. Wait and suffer; and in God's good time and in His way, the pain will be taken away.'

Josephine suddenly caught the old woman's hand and kissed it.

'Do not—do not!' exclaimed Bessie, as if frightened.

'O Mrs Cable,' said Josephine, 'I will wait.—And now, tell me another thing. I have said that I will receive nothing of Richard till he will acknowledge me. I know I have acted very wrongly, but I think he is too unforgiving.'

'It is not for me to judge my son or to hear any words of condemnation from you.'

'I do not wish to condemn him; but I feel that his justice is prevailing over his mercy.'

'Who hardened him?'

'I—I did it; and I am reaping what I sowed. I own that. But, as he will not receive me, will not season anything he offers me with love, am I wrong to refuse to accept aught of him?'

Mrs Cable did not answer immediately, but presently she said: 'No—you do right. I did the same. I would not touch anything; but then my case was different; I was the wronged, not the wrongdoer.'

'More the reason that I should refuse,' said Josephine with vehemence.

Again Mrs Cable considered; then said: 'Yes, that stands to reason; the wrongdoer gives to the wronged one to expiate the wrong, the wrongdoer does not receive from the one wronged—that would aggravate the offence.'

'I am glad you see this,' said Josephine.—'Now—what have you paid for my lodgings? He said you had given a month's rent in advance.'

Mrs Cable coloured. 'You shall not pay that; indeed, you shall not. I engaged the rooms.'

'Because he asked you. I will not stand in his debt.'

'I cannot receive money from you,' exclaimed Mrs Cable. 'It would burn my fingers.'

Then Josephine knelt by her box and opened it. 'We will come to an agreement another way,' she said. 'There is something in the bottom of my trunk—the only poor remains of my finery I have brought with me. You shall take that, and some day it can be cut up or adapted for Mary. Perhaps Mary may be married—and then she shall have my old wedding dress.

I brought it from Hanford with me, not that I intended ever again to wear it, but it served me as a remembrancer. In it I was married, and in it I gave the last offence to my husband. In it I gained him, and in it I lost him. But I shall require it now no more. Take it, and do with it what you like. The silk is very good; it was a costly dress. Richard is building a new house; the driver pointed it out to me as I came along—do not think he had any notion how nearly I was interested in it. He said that Richard Cable came poor to the place, and will soon be the wealthiest man in it. When he has his grand new house, his little girls must dress well as little ladies; and Mary, when she is married from it, may wear my wedding dress. I trust she will be happier than I have been or am likely to be.' She looked up from the box. How large her eyes were, full of expression and intelligence—beautiful eyes, and now looking unusually bright and large because she was tired and thin and sunken about the sockets of the eyes.

'Have you been unwell?' asked Mrs Cable.

'No—only unhappy.'

'It takes a great deal of unhappiness to kill,' said Bessie meditatively. 'I thought sometimes I could not live, so great were my sorrow and shame.'

'I do not care much whether I live or die,' said Josephine. 'Life is very full of trouble and disappointment, of humiliation and self-reproach to me.'—Then, in an altered voice: 'Will you take the dress?'

'Yes,' answered Mrs Cable, still studying her face—'yes—Josephine.'

A smile played over the face of the still kneeling girl. 'It does me good to hear my Christian name again,' she said. 'At Bewdley, I was only "Cable." I should be thankful now for Joss-ephine, though once I scorned to be so named.' She replaced her clothes in the trunk and laid the white silk dress on the bed.

'What is that? That is one of Richard's old handkerchiefs,' said Mrs Cable.

'Yes,' answered Josephine, lowering her head. 'I found it in the cottage after you were all gone. I will do up the dress in it, if you will promise to let me have the old blue handkerchief again. I—I value it. I once laughed at it—just as I laughed at my name pronounced incorrectly, and at his boots; and now—it is otherwise. I value the handkerchief; let me have it again.'

Then Mrs Cable took Josephine's head between her hands and drew it towards her; then checked herself, and thrust her off, and said: 'I cannot, till my son acknowledges you; it would not be just to him.'

Josephine sighed. The colour had fluttered to her cheek and her eyes had laughed; and now the colour faded and the laugh went out of her eyes. 'Am I not to see the children?' she asked.

'I cannot forbid you seeing them,' answered Bessie Cable; 'but you are not to make their acquaintance and be friendly with them. You shall make them all a new set of gowns and frocks; you shall have their old ones as patterns, but must make them a size larger, as the children are growing—that is, all but Bessie. I suppose that the dresses will have to be fitted; then you may touch them and speak to them; but you

must not kiss them or be friendly with them. Speak to them only about the fit of their clothes.'

'I am very hardly treated,' said Josephine.

'You must consider—you have brought it on yourself.'

'Yes, I have done that, and I must bear my pain.—I shall see little or nothing of Richard?'

'Little or nothing, and he will not speak to you. He is away a great deal now. We see him only at intervals; and when he is at home, he wishes to be left undisturbed with his children. Then, once more, Mrs Cable asked if Josephine had all that she needed; and left, with the white silk dress tied up in Richard's blue handkerchief, when assured that nothing further was required except that which she was not empowered to give.

THE 'B. M.' NEWSPAPER ROOM.

THE new Newspaper Room, or 'White' wing, which has been recently added to the library of the British Museum, and which also includes additional accommodation for the departments of Prints and Drawings, and Manuscripts, is one with which, perhaps, the outside public ought to be made better acquainted. To regular 'readers' its advantages are at once apparent. In the present circular reading-room, erected in 1857, and without doubt the finest room of its kind in the world, it was, previous to the erection of the present Newspaper Room, a most formidable task to consult, say, a one or two years' file of a daily London or provincial newspaper. Now, however, this is all altered; and with specially constructed tables and desks, and with ease and quickness of supply, an immense saving of time and trouble has been effected.

The new wing is situated at the south-east side of the main building, on ground that was formerly occupied by the garden attached to the official residence of the principal librarian. It has its principal front in Montague Street; and in the solid and imposing style of its architecture, it harmonises perfectly with the character of the main building. The dimensions of this front are a hundred and twenty feet long, and forty feet in height. Two sides are then carried westward to the walls of the old building. The fronts are of stone; while the walls looking into the open court enclosed between the north and south sides are of glazed bricks, which secure abundance of light to the rooms looking out into it. The entrance for readers is through the Grenville Library, on the right of the great hall, at its conjunction with the King's Library.

The building consists of four separate floors—the basement, which is well lighted from without; a ground-floor; a mezzanine or middle-floor; and above this, a gallery lighted from the roof. The disposition of the additional space thus acquired by the trustees is at present somewhat as follows: The basement and the ground-floor on the north side are devoted to the present and continually increasing collection of newspapers published in Great Britain and Ireland, which has of late years entirely outgrown the limited space formerly allotted to it in the basement of the circular reading-room. The ground and mezzanine floors on the south side are given up to the department

of Manuscripts, and afford every accommodation for the officials, and rooms for consulting special and valuable manuscripts; and for the collation of texts, facilities of a greatly superior kind to those which formerly existed have been provided. The mezzanine floors on the front and north sides are devoted to the department of Prints and Drawings, popularly known as the Print Room, which has only now acquired proper accommodation and convenient exhibition rooms for the valuable art treasures it contains. Finally, it is intended to utilise the south section of the sky-lighted gallery for the occasional display of the several collections of works of art in glass, pottery, and porcelain.

The foundation stone of this important addition to the British Museum was laid by Dr Edward A. Bond, C.B., the principal librarian, on Saturday, September 23, 1882; and the operation of building, &c. occupied a period of nearly four years. The work has been executed, as was to be expected, in the most approved and substantial style, and every modern improvement has been introduced. The entire building is, as far as possible, fireproof, and constructed with iron girders and concrete floors. The wainscotings are of oak, and the floors of pitch-pine. The cost of erecting the new building has been defrayed out of money bequeathed to the trustees, so long ago as 1823, by Mr William White, a gentleman who formerly resided in Tavistock Square, and who, at his death, left them the reversion of a sum of £63,941, to be used at their discretion, but apparently with a hope that it might be expended on an extension of the Museum buildings. After making provision for his son, the testator left his real estate and the residue of his personal estate 'unto the governors for the time of that national institution, the British Museum. For from the nation my property came, and when I leave my son enough to be a farmer, he has that which may make him as happy and respectable as he would be in any station.' A life-interest in the legacy was, however, left to the testator's widow, which Mrs White survived to enjoy until the year 1879. The sum which fell to the trustees was then, by probate and other duties, reduced to £57,572. Of this sum, some eleven thousand pounds were laid out in the erection of a new Sculpture Gallery between the Elgin and Assyrian Galleries; four thousand pounds were judiciously expended in the erection of sheds in the inner quadrangle for the reception of sculptures previously housed under the colonnade of the front façade, and in the re-arrangement of the boilers, the construction of a new boiler-house, and generally in improving the ventilating and heating apparatus throughout the entire building. The remainder of the money was devoted to the erection of the Newspaper and other rooms just described. An inscription runs along the frieze on the principal front in Montague Street: 'Erected from Funds bequeathed to the BRITISH MUSEUM by WILLIAM WHITE, A.D. MDCCCLXXXIII.'; and it is interesting to notice the exact words used by Mr White in his will: they are as follows—'The money and property so bequeathed to the British Museum I wish to be employed in building or improving upon the said institution; and that round the frieze of some part of such building, or, if

this money is otherwise employed, then over or upon that which has so employed it, the words "GULIELMUS WHITE Arm. Britannia dicavit 18—" be carved, or words to that import. It is a little vanity of no harm, and may tempt others to follow my example, in thinking more of the nation and less of themselves.' The sentiments thus expressed may well be commended to the consideration of those who have more riches to leave behind them than proper ways of fitly disposing of them. There are certainly not many ways of better obtaining a desirable immortality at so cheap a price as the endowing or building of a public library or an educational institu-

The various departments of the new building enumerated above are now in full working order, and available to readers daily as follows : May to August, till six P.M.; March, April, September, and October, till five P.M.; November to February, till four P.M. If, however, a reader should desire to peruse a volume of newspapers or of parliamentary Reports—which are also now in the new room—he has simply to notify the fact to the superintendent, and at closing-time the volume desired will be sent into the large reading-room, where the reader can have it at his disposal till eight o'clock in the winter months, and seven o'clock during summer.

As the reader passes through the corridor leading to the Newspaper Room, an attendant outside rings a bell, and he is confronted by an official, who inquires what papers are wanted. In a very brief space of time the volumes are laid before him, and a ticket taken for each, which is retained entirely. Not a moment is thus lost; and as the tables are fitted with the most approved desks or supports, writing materials, and other necessaries, the reader can start work almost instantly. Of course, as under the old rules, only bound volumes of newspapers are available, so that, so far as weekly or provincial journals are concerned, they can only be had in yearly or half-yearly volumes. London and provincial daily journals, however, are generally bound up in two-monthly volumes, and are therefore more readily available.

THE OLD WAY AND THE NEW.

CHAPTER II.

It was not without some natural regret that Abel removed to his new quarters, and vacated the humble rooms which had been his home for nearly half a century. He and Mary Nunnelly at once became firm friends; and for the child Freddy he conceived an almost passionate fondness, as old people frequently do for very young children. As for Mrs Roding, she was all smiles and honeyed words, and seemed as if she could not do enough for 'dear Grandad'; while Matthew continued to go to and from business as soberly and punctually as heretofore. His house was an unpretentious one in a quiet street in Canonbury, so that Grandad was able to spend his evenings as usual at his favourite tavern in the Essex Road. But this state of things was too good to last. It was one of those years when an epidemic of speculation spreads far and wide, seeming to be in the very air men breathe; when the blood of every

one who has money to invest, and of many who have none, goes up to fever-heat; when every day blows its own gorgeous bubble, and no scheme is too rash or improbable to be greedily clutched at; when one bogus Company after another is gaily launched, and, like an argosy with golden sails, floats joyously for a little while over summer seas which are as treacherous as they are sunny. After a time the tornado bursts. One argosy here and there comes safely into port; the rest founder in open sea, and ruin and desolation find their way into ten thousand homes.

It was scarcely to be expected that Matthew Roding, who was a born gambler, should escape the prevailing contagion. His blood simmered; his fingers itched; his sleep was troubled with strange dreams; in his waking hours he saw visions; the fever was upon him. In such piping times there seemed to him no reason why he should not turn his ten thousand pounds into a hundred thousand, or into as many more, for the matter of that. The feast was spread before him; what a fool he would be to stand by and watch others devour it, and he starving meanwhile! His previous experience at Liverpool stood him in good stead. He entered the arena a trained combatant. His first successes served still further to turn his head. Deeper and deeper he plunged: thousands of others were doing the same. He joined the directorate of several new Companies; he even 'promoted' two or three schemes on his own account; in the City he began to be talked about as a rising man. Meanwhile, the business at Bankside was left more and more to take care of itself. He began to hate to go near the place. He took an office in Throgmorton Street on his own account, gorgeous with mahogany and plate-glass. Here, with the assistance of a confidential clerk, he transacted his financial business; and here his new City friends were always sure of finding a magnum of champagne of some famous brand. His sober, somewhat old-fashioned garb was discarded in favour of one much more florid and effective. But of all this not a whisper reached Abel. The old man noticed that his son was gayer in his attire, but that was all; Matthew went and came with the same regularity as heretofore. The first intimation of change burst on him like a thunderclap. It was his daughter-in-law who broke the news to him one morning after breakfast. Matthew had taken a villa at Tulse Hill, and they were going to remove there in a fortnight's time, she told him. He merely said: 'Very well. At my time of life I don't know that it matters greatly where I live.' But in his heart he knew that it did matter.

Abel opened his eyes very wide indeed the first time he went over the new domicile. It was a staring red-brick edifice of fifteen or sixteen rooms, standing a little way back from the road in its own grounds. *Carte blanche* had been given to an eminent furnishing firm to fit it up from garret to basement, and they had not neglected their opportunity. Everything was in strict accordance with the latest canon in such matters, as laid down by the highest—and most expensive—authorities. In the coachhouse, Grandad found a brand-new brougham for the master of the house, and a brand-new victoria for the mistress of the house; and in the stables, two

brand-new horses. He could scarcely believe that he was not walking in a dream. The house had originally been occupied as a Seminary for Young Ladies, and a classroom had been built out at the back, with windows looking into the garden. This out-building had now been divided into two rooms, with a door leading from one to the other, and a side-door opening into the garden. The rooms in question had been fitted up for Grandad's sole use and occupation. A short passage with green baize doors shut them off from the rest of the house.

His daughter-in-law herself introduced him to the rooms. 'Think how cosy and comfortable you will be here, with no one to disturb you or interfere with you,' she said. 'You can come and go just as you like. You can smoke your pipe in the garden all day long. You know I strongly object to the odour of tobacco in the house. And then there is a door at the end of the garden by which you can get out into the lanes and fields at the back. You were always fond of rural rambles, I think. Sarah, the house-maid, will wait upon you and bring you your meals. We shall dine at seven in future; but I know you like your cutlet and pudding not later than half-past one. I have had the furniture brought from your other rooms, because I am sure you are fond of old associations. Nothing has been forgotten that could in any way conduce to your comfort.'

'Nothing—nothing,' said Grandad dryly. Then in a lower tone he muttered: 'Buried alive—buried alive!'

Mrs Roding's sharp ears caught the remark, but she chose to ignore it. Really, old people are often excessively tiresome and difficult to please. As soon as he was left alone, Grandad sat down in his easy-chair; his head sank forward, and he covered his face with his hands. 'Fool—idiot that I have been!' he exclaimed. 'I might have known what would come of it.' He sat thus for a long time, and then he wept, for the first time since he had stood by his wife's grave, more than forty years before.

But next morning he was as brisk and chirpy as ever. Whatever thoughts might be at work in his mind, he kept them to himself. He and Freddy had a romp in the garden after breakfast, and then, towards noon, Grandad, with hat and coat elaborately brushed, sallied forth, and hailed the first 'bus that was bound for London Bridge. How his heart warmed when he found himself in the Borough High Street! He had not been there since he retired from business. How strange everything looked, and yet how familiar! Quitting the 'bus at the bridge foot, he walked through the Market, where the salesmen had not yet forgotten him, but touched their hats and bade him good-morrow, as in days gone by. The old man's heart swelled within him. His errand to-day took him to a certain humble chophouse in an obscure street off Bank-side, where he knew that within five minutes more or less of a certain time he would not fail to find the person of whom he had come in search. The individual in question was Peter Bunker, his old and faithful clerk and bookkeeper, who had been in the service of the firm for upwards of forty years. And there of a surety he found Peter, in one of the little partitioned-off boxes in

which he dined six days out of seven, year in and year out. He was a little, prim, closely shaved man, about fifty-five years of age, with the deferential manners of one who all his life has filled a subordinate post and has no expectation of ever filling any other. He started to his feet with wide-open mouth when he saw Abel's tall, gaunt figure enter through the swing-doors and advance along the narrow aisle with its sanded floor, peering keenly from side to side as he did so. 'Mr Roding—sir!' was all the little man could gasp as their eyes met.

Abel's hand went out and gave the other's a grip that brought tears into his eyes. 'It's such a fine day, Bunker, that I thought I would drop in and have a chop-and-mashed with you,' he said cheerily. 'I knew to a tick when to find you here. I don't know whether you or St George's keeps better time.'

Little more was said till Abel had finished his chop. Bunker surmised that there must be some good reason for his old master's visit, but could only wait till he should be told what it was. 'And now we will walk as far as Bilbo's and see whether he has any of his famous old port left. You must steal an hour from business this afternoon, Bunker, in memory of old times.'

So to Bilbo's they adjourned, which was no great distance away. There they found a quiet corner where they could talk without being overheard. Then was Bunker duly enlightened as to the reason of Abel's visit, which was simply to obtain from the old clerk a trustworthy account of the present condition of the firm and business matters generally, now that a year had elapsed since the reins of power had been transferred to other hands. The story told was one that might well have moved Grandad to the depths of his being. Whether it did so or not, Bunker had no means of knowing, for his auditor was one of those men who may be touched to the quick without betraying it either by word or look. He sat and listened to Bunker's recital as quietly as though it were the most matter-of-fact narrative in the world. He sipped his wine in a leisurely way, now and then interjecting a quiet 'Oh, indeed,' or 'Just so,' with an occasional question to elucidate some particular point; but for the most part listening in silence, with eyes that were half veiled under their shaggy brows.

After that first occasion, Abel made a point of seeking an interview with Bunker once a month; of those meetings no mention was made to Matthew. Grandad went quietly on his way, seeming to see and know nothing, and becoming day by day more of a nonentity in the establishment at Tulse Hill. Nearly all his meals were now taken alone in his own rooms, except when he could smuggle Freddy and Mary in to tea on those afternoons when Mrs Roding happened to be out shopping or visiting. Often a week would pass without he and his son setting eyes on each other. His daughter-in-law had succeeded to admiration in her scheme for isolating him from the rest of the household. On Sunday, however, Matthew always made a point of sitting for half an hour with his father. On these occasions, no mention of business matters ever passed between the two; their talk was confined to the leading

questions of the day, for of late, since he had so much time on his hands, Abel had become a great newspaper reader. No hint ever passed his lips that he had the slightest knowledge of anything respecting which he was supposed to know nothing. So month passed after month, and, if it were possible, Grandad became more than ever a cipher in the household ; while Matthew Roding, like a swimmer buoyed up with bladders which a pin-prick may at any moment cause to collapse, ventured farther and yet farther into the deep waters of speculation, on whose surface the sun still shone and balmy zephyrs played, while no cloud even as big as a man's hand uplifted itself like a menace above the horizon.

And so we come again to Grandad's seventy-second birthday, and to Ruff Roding and Mary, whom we left so long ago walking together in the direction of the post-office.

'Why is it such a lucky thing that we have met this morning?' asked Mary for the second time.

'Because, as you may or may not chance to know, this is dear old Grandad's birthday, and I have made up my mind, despite both my father and my charming stepmother, to spend it with him. When I nearly fell into your arms just now, I was puzzling my brains as to how I should be able to obtain access to the enchanted castle without the ogress who has laid such a ban on me having the slightest suspicion that I was there. Happily, you have solved the difficulty for me.'

'Expliquez-vous, monsieur.'

'As soon as you get back to the house, you must see Grandad and tell him that I am coming. Then, when the coast is clear and nobody about, either you or he must unlock the door at the bottom of the garden that opens into the lane, and there you are—don't you see?'

'The audacity of young men, of painters especially!—'

'Is something that surpasses belief.'

'Mrs Roding will be sure to hear of it through one channel or another.'

'I don't care a rush if she does—after it's over. I've a right to visit my grandfather, especially on his birthday, and no one shall hinder me from doing so. A parcel addressed to him will be left at the house in the course of an hour or so. It's only a game-pie and one or two other trifles. We shall be as jolly as sandboys.—But oh, Mary, my darling, do—do contrive somehow to dine with Grandad and me! Tell a whopper for once. Say you want to go somewhere—shopping, or anything—then go out as usual ; and I'll let you in ten minutes later through the garden door.'

Mary shook her pretty head. 'Indeed, sir, I shall do nothing of the kind, not even for the honour of dining with *you*.—Perhaps, if Grandad were to ask Mrs Roding'—

'I'll get the old boy to do it. She can't be such a curmudgeon as to refuse him on his birthday.—You don't ask me what I've got in the parcel under my arm.'

'I was always taught that little girls should never ask questions.'

'That doesn't keep you from being inquisitive ; so, to save you from dying of curiosity, I'll tell you. It's a little water-colour sketch I've

done, as a birthday present to Grandad, of an old water-mill close to where he was born. I've heard him say that when he was a boy he would stand by the hour watching the slowly turning wheel and the white flashing water ; and whenever he goes down to Cumberland he never fails to visit the old mill.'

'He will be delighted with it. It will make him feel that he is not quite forgotten.'

'Dear old boy ! I wouldn't for the world have him feel that he is neglected.—But I've something else to tell you. As the gourmands are said to do, I've kept my *bonne bouche* till the last. I've good news, my pretty one—great news—glorious news ! "Special edition." Can't you guess what it is ?'

Mary turned a face to him that blushed, and paled, and then blushed again. 'You've not'—she said, and then stopped.

'Yes, I have,' he laughed. 'That's just it.'

'You've not sold your picture, Ruff!' she gasped.

'Haven't I, though ! But I have, and got a commission for another into the bargain. An American millionaire—a splendid fellow.—No haggling ; cash on the nail.—Molly, my darling, we'll be wed in six months from to-day, or my name's not Ruff Roding. Rum-ti-tum-tootle !'

If they had happened to be anywhere but in the public street, he would have taken her in his arms and kissed her then and there.

RABBIT CRUSADING.

MANY of our readers will probably have heard and read much about the ravages of poor 'bunny' upon the sheep-runs of New Zealand, Victoria, and other colonies ; but some particulars of the manner in which 'the pest' has been dealt with may be of interest to those who are interested in its suppression. Let us then endeavour to give some description of a rabbit-war, so to speak, of which we had some experience. The work was carried on upon a run of one hundred thousand acres in the South or Middle Island of New Zealand, which had become so overrun with rabbits that the sheep-flock had been reduced from eighty thousand to forty-five thousand, through the inability of the land to support the larger number, owing to the amount of grass consumed by the rabbits. It is commonly related on the station that, about five years before the time of which we are writing, it was a difficult matter to find a rabbit anywhere on the run, and that the manager once reproved one of his men for taking out a gun to try and shoot one of these animals, saying, that if the rabbits were indiscriminately hunted, it would soon be impossible to get one for dinner. And yet so great was the increase during these succeeding five years, that the owners of the station found the carrying power of their land reduced by nearly one half, and were at their wits' end for a remedy.

Various means were tried for reducing the numbers of the rabbits. Men were engaged to breed ferrets on the run and turn them loose ; other men were allowed to camp upon the run and keep large packs of dogs to wage war upon them, and were paid liberally for the skins they

obtained ; while others were similarly encouraged to kill them with guns. But notwithstanding all these measures for their suppression, the rabbits continued to increase till their numbers seemed limitless.

In the early days of this trouble, the squatter concerned himself only about the slaughtering of bunny, and paid no heed to the value of the skins. It was the custom to pay those engaged in killing them a certain price, from a penny up to two shillings and sixpence—according to the thickness of the rabbits on the land—for each tail or pair of ears brought into the homestead. In this regard there is a story told of two parties of 'rabbiters' who were engaged upon adjoining runs, on one of which the owner paid for the tails delivered to his storekeeper, while on the other a similar price was paid for the ears. These worthies hit upon the device of meeting at the boundary fence and exchanging ears for tails. Thus, each gang was paid for all the rabbits killed upon both runs, and hence every rabbit killed was paid for twice. This nefarious practice was carried on for some time before the victimised squatters discovered the fraud.

In course of time the value of the skins was recognised ; and now millions are shipped annually to the London market, where they command a good price, and are made up by the manufacturers into a large variety of articles of female adornment, such as muffs, capes, trimmings, and the like ; besides which, it is said that the skin is tanned and made up into an imitation kid. Besides the common gray rabbit, so well known in England, there are in New Zealand some very pretty varieties. Notably, there is what is known as the 'silver gray.' The fur of this species is a mixture, in varying proportions, of black and white tails. For these, nearly double the price of ordinary skins is paid by the skin-dealers. Besides the silver grays, which are sometimes almost white, and at others nearly black, there are also many pure black rabbits, and a few quite white. There are also in some parts black rabbits with brown spots.

The method of taking and preparing the skins is as follows : the skin (jacket) is taken off without being split up in the usual way. The Skinner places his foot upon one hind-leg, and holding the other in his left hand, slits the skin with his knife across from leg to leg ; he then disengages the skin from around each hind-leg, and planting his foot upon both of these, pulls the whole skin up over the body of the rabbit, precisely as a footballer takes off his buttonless jersey. The skin is thus turned inside out ; and a skilful Skinner will, with a sharp pull, unless the rabbit be very old and tough, strip the whole skin, dragging the head and fore-paws through without any further aid from his knife. But in some cases he will have to cut round the neck and fore-paws before he can disengage the hide. The speed with which men and boys who are accustomed to the work can strip bunny of his jacket is almost incredible.

Having taken off the skin, the rabbiter, unless he wants it as food for his dogs, leaves the carcass lying where he found it ; and again turning the skin so that the fur side is outward, strings it upon a strap hanging round his neck, or upon his belt, and goes on in search of more spoil.

The methods already spoken of, shooting, and hunting with dogs and ferrets, having proved wholly inadequate to meet the case, other methods had to be sought ; and at last the expedient of laying poisoned grain was hit upon. In the direction of poisoning, many experiments were made with different and uncertain results. Carrots prepared with arsenic were used, and are still in great favour in many parts, and both wheat and oats were 'phosphorised,' as the professional rabbitting term goes. At first, the poisoned grain was placed upon the ground indiscriminately in large heaps, with the result that many sheep and cattle ate it and were killed. This seemed to present an insurmountable obstacle to its use ; but further experiments led to the plan of putting down the grain in small quantities in each place, not greater than a tea-spoonful, which resulted very successfully. Oats are generally used in preference to wheat. This was the method by which poisoning with phosphorised oats is carried on, as observed by the writer on the station referred to above. Provisions were made for employing twenty-five men constantly for twelve months in laying poison. These, provided with four large tents, measuring ten feet by twelve feet, and under the supervision of the head-shepherd, were set to work upon a carefully devised plan. In these days of 'wire-shepherds,' as they are called—that is, wire-fences—termed wire-shepherds because they take the place in a large degree of shepherds or 'boundary-keepers,' who in the old days had to be employed by the squatters to keep the sheep from straying in far greater numbers than at the present day—a sheep-run is always divided into a number of sections, often several thousands of acres in extent, called 'paddocks.' The 'poisoning gang' would be taken to a convenient camping-place in one of these paddocks and there quartered. A well-sheltered nook would be selected contiguous to a creek, of which there were several on the run, and here the camp would be pitched. The four tents, for which the poles, pegs, and all necessaries would be carried from camp to camp, would be set up ; quantities of dry fern, reeds, creepers, or grass, as the locality might provide, would then be cut and spread upon the floor for bedding ; and on the top of this each man would spread his blankets. To each tent six men were apportioned, four of whom had to lie side by side across the inner half ; while the other two lay in like manner, occupying one half of the outer portion.

Now to attempt a description of the method by which bunny was attacked. Let us suppose that it was planned first to poison, say, No. 1 paddock. Some weeks before the war began, the bulk of the flock were turned into this paddock to eat the grass close down, so that the rabbits should have but little choice of food when the poisoning began. Next, the camp was pitched in this No. 1 paddock ; and then, the sheep having been moved on to the paddock next intended to be operated upon, work was commenced in earnest. The poisoned oats were prepared at the home station, and sent out to the rabbiters upon packhorses. At one time, the oats and phosphorus were boiled together in an open vessel ; but as the fumes were found to be injurious to the men who superintended the operation, cylindrical boilers with

hermetical covers were contrived revolving upon an axis. These cylinders, lying horizontally between upright stanchions, and turned with a crank, each capable of holding about two sacks of oats, were filled with a mixture of grain, phosphorus, and water in certain proportions. The cover having been sealed up, a fire was lighted beneath the boilers, which were kept slowly revolving while the contents boiled for a certain length of time. The poisoned oats thus prepared having been brought to the scene of operations, the next business was to distribute them for the delectation of poor unsuspecting bunny. For this purpose, each man was provided with a semicircular tin about six inches deep, with a diameter of about eighteen inches. Each tin was fitted with an overarching handle, passing from the centre of the diameter, or flat side of the tin, to the centre of the circumference, or curved side. Through this handle a strap would be rove, by which means the tin could be slung over the shoulder in such a way that the flat side might rest against the bearer's left hip; the semicircular shape being designed for convenience in carrying. Each tin would hold from fifteen to twenty pounds of oats—nearly half a bushel. Each man carried in his right hand a light stick about two feet six inches long, with a piece of tin bent in the shape of a spoon, and about the size of a teaspoon, fastened to one end. Thus accoutred, and with a tin bottle full of tea, and a little bread and meat in a handkerchief, slung to his belt, for the mid-day meal, the rabbiter would 'fall in' after breakfast every morning at eight o'clock to begin the day's work.

On completing one paddock, drays would be sent from the home station to transport the whole of the impedimenta to the camping-place in the next, and so on from time to time. Nothing but absolutely perpendicular cliffs, which were sometimes met with, was allowed to divert the line of march. Sometimes the men would be climbing up steep mountain sides, at others picking their way gingerly, at no small risk of breaking their limbs, along the faces of steep sidings and cliffs; and anon they would be crossing creeks or threading their way through clumps of 'bush' (wood). At times, when a piece of country had to be attacked where there was very heavy tussock-grass or scrub, a day or two would be given to 'burning off' before laying the poison.

So much for the business of putting the poison down for the rabbits. Now what about securing the skins? For this purpose, a contract was let to three men, who, in the guise of 'camp-followers,' as they might be termed, followed the rabbiters from place to place. These men were provided with tents and wires for stretching their skins, and were paid by the station owners one-and-sixpence a dozen for all skins brought in properly dried and tied up in dozens. The contractors employed two boys to help them; and all five used to spend the day from early in the morning until nearly dark scouring the country over which the poisoners had passed the day before, and taking the skins from the carcasses. Then, upon their return to camp, they would all have to sit up far into the night stretching and cleaning the spoils of the day.

This gang had to pay the station for its pro-

visions. The collections of skins daily would vary from one hundred and fifty up to three hundred per head, men and boys, according to the abundance of the rabbits in different places. The gatherings would rarely fall short of one hundred and fifty a head, from which it will be seen that these men were earning handsome wages. The writer on one occasion walked six miles, to and from a certain patch of ground that had been poisoned a day or two before (three miles each way), and skinned one hundred and twenty rabbits between breakfast-time and mid-day. The skins collected do not represent all the rabbits killed. Many hundreds die under ground, and numbers are torn to pieces by the hawks and seagulls, which congregate in enormous numbers from all directions upon 'poisoned country.'

From the foregoing, it may be seen what the ravages of the rabbit really mean, though, unfortunately, we have not all the figures at hand necessary for making an accurate statement. But first glancing at the loss to the station in wool through the reduction of its flock from eighty thousand to forty-five thousand sheep, let us review roughly the weekly cost of this rabbit-war alone: Overseer, being the head-shepherd, a 'paid' yearly hand. Twenty-four men at twenty-five shillings each, £30; cook, £1, 15s.; man to prepare poison, £1, 10s.; four packmen at twenty-five shillings each, £5; rations for thirty-one men at seven shillings each, £10, 17s.; oats, say, a bushel and a half per man daily, equal to two hundred and twenty-five bushels at two shillings and sixpence, £28, 2s. 6d.; phosphorus (quantity used and price not known), say, £5; bonus to men for collecting skins—say, three men and two boys collect three hundred each daily—for week, nine thousand, or seven hundred and fifty dozen at one shilling and sixpence, £56, 5s. Thus, roughly speaking, this station was expending weekly £138, 9s. 6d. in protecting itself against loss from the continual increase of the rabbits, which threatened soon to take entire possession of the whole country. From this total have, of course, to be deducted the proceeds of the skins in London, which may be calculated, we think, after allowing for all shipping and home charges, at about two shillings and sixpence per dozen. This would give £93, 15s. to be deducted from £138, 9s. 6d.; leaving a weekly charge upon the station of £44, 14s. 6d. But this, it must be remembered, is a very rough estimate, and is probably a good deal below the actual cost. In allowing a collection of three hundred skins per man and boy daily, we have probably far exceeded the mark; and it will be seen that any material reduction here would alter the figures considerably. Then, again, the estimate of seven shillings per head for rations is probably an under-statement, as is also the item of five pounds for phosphorus. Moreover, no estimate has been made for wear and tear of tents, cooking utensils, horse-flesh, drays, and harness, &c.; nor for wages of men packing, counting, pressing, and carting the skins, and getting firewood and so on.

But enough has been written to show what a serious matter the 'rabbit pest' is to the squatter and to the country; and we trust this paper may prove of some interest to English

readers. It should be mentioned that in Australia the rabbit skins are of no value whatever, because, owing to the warmer climate, they are not so heavily furred as in New Zealand. The ultimate result of the crusade we have endeavoured to describe was highly satisfactory, the run being virtually cleared of rabbits for the time being. Nevertheless, it will be a perpetual charge upon the station to keep them under, as a year or two of neglect would bring about again the same state of things. And this is true of the greater part of the South Island of New Zealand and many parts of Australia. The rabbits are a constant source of anxiety and annoyance, and unflagging vigilance is necessary to keep them in check.

THE LOST ISLAND.

A LEGEND OF ORKNEY.

MOST people have heard of the Standing Stones of Stennis in Orkney. In a silent circle they stand amid the solitude of the moor, silvered with the lichens of dead centuries. Tourists come and gaze on them, picnic beneath them, and speculate vaguely as to how they came there. Antiquaries also gaze, and proceed to evolve from their inner consciousness some theory to account for the origin of the stones. But the annals of the countryside have no legend of the race which raised them. All over the islands are the vestiges of some busy tribe who dwelt half underground, and have left to the worms and the rats their buried dwellings, known now as 'Brochs.' Yet the strange fact remains, that, while these peoples are utterly forgotten by their successors, the still earlier tribes, who made terrible the islands of old, have left their traces in the popular legends with which the Orcadian children are kept quiet in the long dark winter evenings.

There lies on a moor not very far from Stennis a huge stone, which was flung by a giant in the island of Hoy at his enemy Cubby Ruo, in Rousay, full ten miles off. That stone must have been there for generations before those which have outlasted man's memory at Stennis, and yet the very name of the man through whose quarrel it came there is unforgotten. Cubby Ruo was a bit of an engineer in his way, and determined to raise a connecting mound between his own island of Rousay and the smaller isle known as Wyre or Veira. In the pride of his strength he took too great a load of earth and stones in his creel, stumbled and fell, and lies to this day under the mound which he was carrying.

His island of Rousay seems to have been a favourite haunt of giants, fairies, and supernatural people of all kinds. It is separated from the Mainland of Orkney by a narrow strait, through which runs a furious tide. At certain hours of the day, two tides meet here, and their meeting-place, known as Enhallow Roost, is one wild whirl of foam and leaping spray. In the middle of the roost lies the little green isle of Enhallow.

The name is commonly held to mean 'holy isle,' and to have been given the island from the fact that on it was erected a very early Christian chapel or hermitage. It seems just as probable, however, that the name is derived from Hela, the old Norse goddess of death. Be that as it may, tradition tells that Enhallow was once an invisible island, only appearing amidst the foam of the roost at certain times, and vanishing again before it could be reached by mortal foot. It came to be known in Rousay—how, we have not been able to discover—that if any man seeing Enhallow took iron in his hand and kept his eyes fixed on the island till he landed upon it, he would reclaim it from the sea for ever. This was done at last, and Enhallow has remained visible and tangible ever since.

But for the adventurous there is hope still. Somewhere near Enhallow there lies another island, unseen of men for more years than can be reckoned. This is the story of its last appearance, as told me by a native of Rousay, one who has seen the fairies and heard the wild strange music of the sea-folk.

One day, very many years ago, a young girl went up to the hill opposite Enhallow to cut peats. Her day's work done, she was sitting resting on the heather, when a strange man came up to her. After a little talk, he asked her to go with him; and though she refused at first, he gained such power over her that he made her come. When night came and she did not return, her people became alarmed, and set out to seek for her. High and low the whole island was searched, but no trace found of the missing maiden. The wonder passed away, and matters fell back into their old course. Some time after this, the father and brothers of the lost girl went out to fish. They were somewhat to the west of Enhallow, when a thick fog fell on the sea, so thick they could not tell where they were. At last their boat touched land; and on going ashore, they found themselves, as they thought, upon Enhallow. Going a little inland, however, they found that they were on another island, for they saw a big house before them. On coming up to this house, they found, to their surprise, none other than their lost daughter and sister in the person of the 'good-wife.' She took them in and gave them food, and told them she was married to a 'sea-man' and living with him here. As they were sitting, the door opened, and 'a great brown wisp' came rolling in and went 'ben.' (A 'wisp' is a huge ball of twisted heather-rope, which is used in Orkney for thatching purposes.) In a few minutes a handsome young man came 'but.' He was introduced as the husband of the young woman, and welcomed her friends very kindly. Two more wisps came in while they waited, and from each of them came forth a sea-man, who had been out fishing. When the men had to leave the house, the father asked his daughter to return to Rousay with him; but she refused, saying she was too happy with her husband to leave him. She gave her father, however, a knife, and told him while he kept it his fishing would never fail, and he would be able to visit her whenever he wished. After a tender farewell, the Rousay men pushed off into the mist; but the

old man somehow let the knife slip, and it fell into the sea. In a moment the boat touched land on Rousay; but the island and its mistress have never since been seen.

H Y D R O P H O B I A.

Of all the diseases to which man is liable, hydrophobia, the disease which follows consequent upon the bite of a rabid animal, is surely one of the most dreadful. Its associations in our mind are such that the very mention of its name is sufficient to cause an involuntary shudder. There is the sickening and often prolonged uncertainty, after one has been bitten, as to whether the disease will manifest itself or not; and then, when once the symptoms declare themselves, the horrible certainty of a most awful death. Yet, though the deadly characteristics of the disease are so well known, until lately but very little was understood as to its real nature, and as a consequence, there were no means for its certain cure or prevention, once the virus was present in the system. The most erroneous ideas prevailed, and indeed many of them still prevail, with respect to hydrophobia. For instance, it is supposed by many that it is more prevalent in hot than in cold weather; but this is not so, for it is known in the arctic as well as in the torrid regions, though, strange to say, it is not known, so far as can be ascertained, in Australia or New Zealand. Again, the mad dog is not afraid of water, as is often supposed, but would drink if it could: it is the spasms in its throat which prevent its doing so. Then, there was the popular superstition—which seems now, however, to have nearly died out—that if a perfectly healthy dog bit a person and afterwards went mad, the person bitten would also go mad and die. It would be difficult to say how many dogs, quite innocent of any taint of hydrophobia, have been sacrificed to this unreasoning superstition, the natural corollary of which was, that the life of any person bitten by a dog was in danger until that dog had been killed. Gradually, however, these and other kindred errors and misconceptions have been dying out; but it was left to M. Pasteur to discover the much needed means of successfully dealing with hydrophobia; for successful his method must be admitted to be, seeing that he has given such proofs of the efficiency of his treatment, and seeing, too, that these proofs have been tested, and admitted as correct by a Committee appointed by the Local Government Board of this country to inquire into M. Pasteur's treatment of the disease.

M. Pasteur's method of treating hydrophobia is by inoculation, or vaccination, as we may term it. He ascertained that if a healthy animal were inoculated with a portion of the virus taken from the spinal cord of an animal which had died of rabies, it would contract the disease in the same way as though it had been bitten by a rabid animal. He found, too, that, by a series of inoculations through rabbits, the intensity of the virus was increased; that is, if the virus obtained from

one rabbit was inoculated into a second rabbit, virus from the second into a third, and so on, the strength of the virus increased; and the period of incubation was therefore shortened, until, from about fifteen days in the first instance, it was reduced, after a cultivation of the virus through fifty rabbits, to seven days. Now, the virus taken from the spinal cords of any of these rabbits would, if inoculated into a healthy animal, produce rabies; but if the cords are suspended in jars containing dry air at a certain temperature, the virus is gradually weakened or attenuated without decomposition taking place, until, after a certain period, it is no longer capable of producing rabies. By this process it will be seen that virus would be readily obtained of various degrees of intensity, ranging from an almost harmless nature to the highest point of virulence. By a series of experiments, M. Pasteur established the all-important fact, that if a dog or other animal were inoculated with a portion of this attenuated virus, and inoculated on each succeeding day with virus of a greater strength than that used on the preceding, it would be rendered non-liable to rabies.

This interesting fact has been most clearly proved by experiments made in this country by Mr Horsley, the Secretary of the Committee appointed by the Local Government Board. All the experiments, it may be here stated, were rendered painless by means of ether or chloroform. Six dogs were 'protected' after the method observed by M. Pasteur, or, in other words, they were inoculated with virus from the spinal cords of rabbits which had died of rabies, using on the first day a cord which had been dried for fourteen days, and on each succeeding day a cord dried for one day less, until a fresh cord was used. These six protected dogs, with two unprotected dogs and some unprotected rabbits, were then, after being made insensible with ether, bitten by rabid dogs, or by a rabid cat, on an exposed part. The results were conclusive. A protected dog bitten by a dog paralytically rabid escaped scot-free; while an unprotected dog, bitten a few minutes afterwards by the same rabid animal, died paralytically rabid. About four months afterwards, another of the protected dogs was bitten by a dog furiously rabid; he also escaped; while of four unprotected rabbits bitten at the same time and by the same dog, two died of rabies. This was the case with another of the protected dogs and some unprotected rabbits bitten at the same time: the dog lived, the rabbits died. Some six months after being inoculated, two other of the protected dogs were bitten by a furiously rabid dog; and on the same day, by the same dog, an unprotected dog and three unprotected rabbits were bitten. The unprotected dog and two of the rabbits died of rabies, while the protected dogs remained well. The sixth of the protected dogs was thrice bitten on one day by a furiously rabid cat, and a month afterwards by a furiously rabid dog, and again, in another month, by a second furiously rabid dog. It died ten weeks after it had been bitten on the third occasion, though not of rabies, but of diffuse eczema, from which it had been suffering during the whole of the time it was under observation. To make this quite certain, a post-mortem examination of the dog's remains was made, when no signs of rabies could be found; and two rabbits inocu-

lated with virus from its spinal cord in the usual way exhibited no signs of rabies while alive, nor could any signs of such be discovered when, several months afterwards, they were killed. The dog could not, therefore, have died of hydrophobia. The results of these experiments demonstrated in the most effectual manner the fact that animals can be protected from rabies by inoculating them according to M. Pasteur's method. The duration of the immunity thus conferred has not yet been ascertained; but during the two years which have passed since it was proved, there have been no signs of its limitation.

But such experiments as we have just recorded could not, of course, be tried upon human beings; and as M. Pasteur's method is not practised in this country, its success could only be judged of by examining the results of its application by M. Pasteur himself. Between October 1885 and the end of December 1886, M. Pasteur inoculated two thousand six hundred and eighty-two persons; but to take all these cases in the lump, as a means of ascertaining the value of his treatment, could not be considered a sufficiently accurate test, because of the difficulty there is in estimating how many, out of a certain number of people bitten by dogs rabid and supposed to have been rabid, would have died of hydrophobia if not inoculated. Much depends upon the number of bites, and as to whether they are inflicted upon the bare flesh or through clothes; in the latter case, the teeth of the animal may be cleansed in their passage through the clothes. Again, the bites of dogs are not equally dangerous, for cases have been known of a dog biting as many as twenty persons and only one of the number dying; and on the other hand, one dog biting five persons and all dying. Then, too, cauterising and other modes of treatment may prevent a fatal result. All these factors of uncertainty existing, it was necessary, in order to arrive at a just estimate of M. Pasteur's treatment, to investigate personally some of his cases.

He was quite willing that this should be done; and accordingly, the cases of ninety persons were personally inquired into in Paris and the neighbourhood by the English Committee. An analysis shows that out of these ninety cases there were thirty-one of which there was not sufficient evidence to prove that the dogs were rabid; but in the remaining fifty-nine the Committee found that the persons had been bitten by undoubtedly rabid dogs, and that out of these fifty-nine there were twenty-four persons who, after being bitten, had not been treated by cauterising or in any other way likely to prevent the action of the virus. That M. Pasteur's treatment has been efficacious is proved beyond any question by the fact that not one of these persons died from hydrophobia. How many would have died if not treated by M. Pasteur, it is, of course, impossible definitely to state. From observations made of persons bitten by dogs believed to be rabid, and not inoculated or otherwise treated, various estimates as to the number of deaths from hydrophobia have been made, varying from five to sixty per cent. If we take the ninety cases at the very lowest estimate, namely, five per cent, this will give at least four deaths; but seeing that twenty-four persons were

bitten on naked parts by undoubtedly rabid dogs, and not treated in any way, the Committee consider that no fewer than eight persons would have died. It cannot but be admitted that this estimate is indeed very low; in fact, to most people it will appear much too low.

But the two thousand six hundred and eighty-two cases treated by M. Pasteur from October 1885 to the end of December 1886 offer a still further proof of the efficacy of his treatment. Taking the lowest estimate of the percentage of deaths from hydrophobia among persons bitten by dogs supposed to have been rabid, and who were not inoculated, namely, five per cent., it follows that at least one hundred and thirty persons out of the two thousand six hundred and eighty-two should have died; whereas the number of deaths has been thirty-three only, thus showing a saving of close upon one hundred lives. These results may be clearly verified by comparing with them the results of certain groups of M. Pasteur's cases. Thus, out of two hundred and thirty-three persons treated by him, who had been bitten by dogs proved to have been rabid, either by inoculating other animals from them, or by other people or animals dying after having been bitten by them, only four died; whereas, without inoculation, it would be fair to estimate that at least forty would have died. Then one hundred and eighty-six persons were bitten on the head or face by animals proved to have been rabid, only nine of whom died after being treated by M. Pasteur, instead of at least forty. Again, there were forty-eight bitten by rabid wolves, and of these only nine died; whereas, without inoculation, it would have been expected that about thirty would have died—the deaths following bites from rabid wolves being, of course, much more numerous than from dogs.

From the end of December 1886 to the end of March 1887, M. Pasteur inoculated five hundred and nine persons bitten by animals proved to have been rabid, and out of these, only two have died, one of whom had been bitten by a wolf a month before being inoculated, and he died after only three days' treatment.

From January 1886 to April 1887, M. Pasteur has treated one hundred and twenty-seven persons from this country, including one hundred and one bitten by dogs proved to have been rabid. Only four have died, and in one case the death was certified by the English medical man to have resulted from pneumonia. Another of the deaths is scarcely to be wondered at, seeing that the man was repeatedly intoxicated during the whole of the time he was under treatment.

In conclusion, it may be interesting to note how the inoculation of the modified virus acts so as to avert the disease of hydrophobia. Three suppositions have been entertained as to its nature and action. First, that the virus is a living matter, which, when introduced into the system in a modified form, eats up something in the system necessary for its existence, so that, should strong virus capable of producing death be afterwards introduced, it finds nothing to feed upon, and cannot therefore develop. Second, that the weakened virus educates the system to withstand the stronger. Third, that while the virus increases in the body of the inoculated person, it also produces a substance which checks and finally

stops altogether its own growth. This action may be observed in the yeast plant, which as it grows produces alcohol in saccharine solutions, the alcohol presently stopping the growth of the yeast plant itself. M. Pasteur takes this third view, believing that the virus, when present in the system, produces a substance which is in fact its antidote. This being so, the spinal cords of animals which have died of rabies contain both the virus and its antidote. The cords are dried previous to being used, as previously explained, the potency of the virus being thereby reduced to a greater extent than that of the antidote; and each day a fresher cord is used for inoculation, which, though more virulent than that used the preceding day, still contains a larger portion of the antidote, so that, as the treatment proceeds, the latter is able to choke the growth of the virus before it has reached its full incubation period. On this theory it can be seen how it is possible for a person to be bitten by a rabid animal and yet escape; for it is evident that if he can only withstand the action of the virus up to a certain point, the antiodotal substance will stop its further development.

RINGS IN TREES NOT A TEST OF AGE.

WE learn from the *Lumber World* that Mr R. W. Furras, an agent of the United States Forestry Department, who has given much attention to the age of a tree as indicated by rings, as well as to the period at which trees of different species stop growing, and that at which the wood is at its best, has reached some conclusions of general interest. He says: 'Concentric or annual rings, which were once accepted as good legal evidence, fail, except where climate, soil, temperature, humidity, and all other surroundings are regular and well balanced; otherwise, they are mere guesswork. The only regions within my knowledge where either rings or measurements were reliable indications are in the secluded, even, and regularly tempered valleys of the Southern Pacific coast.' Annual measurements of white elm, catalpa, soft maple, sycamore, pig-hickory, cotton-wood, chestnut, box-elder, honey-locust, coffee-tree, burr and white oak, black walnut, osage orange, white pine, red cedar, mulberry and yellow willow, made in South-eastern Nebraska, show that 'annual growth is very irregular, sometimes scarcely perceptible, and again quite large;' and this he attributes to the difference in seasons. As trees increase in age, inner rings decrease in size, sometimes almost disappearing. Diminished rate in growth after a certain age is a rule. Of four great beeches mentioned in Loudon, there were three, each about seventeen feet in girth, whose ages were respectively sixty, one hundred and two, and two hundred years. Mr Furras found twelve rings in a black locust six years old, twenty-one rings in a shell bark-hickory of twelve years, ten rings in a pig-hickory of six years, eleven rings in a wild crab-apple of five years, and only twenty rings in a chestnut-oak of twenty-four years. An American chestnut of only four years had nine rings, while a peach of eight years had only five rings.

Dr A. M. Childs, a resident of Nebraska from 1854 to 1882, a careful observer for the Smithsonian Institution, who counted rings on some

soft maples eleven years two months old, found on one side of the heart of one of them forty rings, and no fewer than thirty-five anywhere, which were quite distinct when the wood was green; but after it had been seasoned, only twenty-four rings could be distinguished. Another expert says that all our northern hard woods make many rings a year, sometimes as many as twelve; but as the last set of cells in a year's growth are very small and the first very large, the annual growth can always be determined, except when, from local causes, there is in any particular year little or no cell-growth. This may give a large number on one side. Upon the Pacific coast of North America, trees do not reach the point where they stop growing nearly so early as those of the Atlantic coast. Two hundred years is nearly the greatest age attained on the eastern side of the continent by trees that retain their vigour; while five hundred years is the case of several species on the western coast, and one writer is confident that a sequoia which was measured was two thousand three hundred and seventy-six years old! At Wrangel, a western hemlock, six feet in diameter at the stump, was four feet in diameter one hundred and thirty-two feet farther up the trunk, and its rings showed four hundred and thirty-two years. But in the old Bartram Garden, near Philadelphia, not more than one hundred and fifty years old, almost all the trees are on the down grade. The oak, which is England's pride, and which at home is said to live one thousand years, has grown to full size and died in this garden; and the foreign spruces are following suit. Silver firs planted in 1800 are decaying. The great difference in the longevity of trees upon the western and eastern coasts of continents in the northern hemisphere seems to be due to the warm, moist air carried by strong and permanent ocean currents from the tropics north-easterly, in both the Pacific and Atlantic Oceans, which makes the climate both moist and equable in high latitudes.

B E Y O N D.

AUTUMN is dying; Winter is come;
Dead leaves are flying; the rivers are dumb;
The wind's like a knife—one's fingers grow numb;
There is snow on the mountain, ice in the pond.
Winter is with us, but Spring is beyond.

The Old Year is dying; its glory is dead.
The days are all flying—their glory has fled.
The bushes grow bare, as the berries grow red;
There is snow on the mountain, ice in the pond.
The Old Year is dying, but the New is beyond.

We are all growing old, and life slips away.
There is bare time for work, and still less for play;
Though we think we grow wiser, the longer we stay;
But there's life in us yet—no need to despond;
This world may wax old, but heaven is beyond.

B. G. J.

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